

# Hazardous Chemicals in Laboratories

WAC 296-828-300

## Definitions

### Action level

An airborne concentration of a hazardous substance that's calculated as an 8-hour time-weighted average, and initiates certain requirements to be followed such as exposure monitoring or medical surveillance.

### Carcinogens

See "Select carcinogen"

### Chemical hygiene officer

An employee designated by the employer who is qualified by training or experience to provide technical guidance in the development and implementation of the chemical hygiene plan. This definition isn't intended to place limitations on the designated employee's position description or job classification within the employer's organization.

### Chemical hygiene plan

A written program developed and implemented by the employer that establishes procedures, equipment, personal protective equipment, and work practices to protect employees from the health hazards of the chemicals used in the laboratory.

### Container

Any container, except for pipes or piping systems that contains a hazardous substance. For example, it can be any of the following:

- Barrel
- Bottle
- Can
- Cylinder
- Drum
- Reaction vessel
- Storage tank

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### Day

Any part of a calendar day.

### Designated representative

Any one of the following:

- Any individual or organization to which an employee gives written authorization
- A recognized or certified collective bargaining agent without regard to written employee authorization
- The legal representative of a deceased or legally incapacitated employee.

### Emergency

Any event that could or does result in the unexpected, significant release of a hazardous substance. Examples of emergencies include equipment failure, container rupture, or control equipment failure.

### Exposure

The contact an employee has with a hazardous substance, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

### Hazardous chemical

A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

### Laboratory

A facility where the "laboratory use of hazardous substances" takes place. A workplace where relatively small amounts of hazardous substances are used on a nonproduction basis.

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### Laboratory-type hood

A device located in a laboratory, enclosure on 5 sides with a moveable sash or fixed partial enclosed on the remaining side, constructed and maintained to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory, and allows chemical manipulations to be conducted in the enclosure without insertion of any portion of the employee's body other than hands and arms.

#### Note:

Walk-in hoods with adjustable sashes meet the above definition provided that the sashes are adjusted during use so that the airflow and the exhaust of air contaminants aren't compromised and employees don't work inside the enclosure during the release of airborne hazardous substances.

### Laboratory scale

Work with substances in which the containers used for reactions, transfers and other handling of the substances are designed to be easily and safely manipulated by one person.

"Laboratory scale" **does not** include workplaces producing commercial quantities of materials.

### Laboratory use

The handling or use of hazardous substances that includes **all** the following:

- Chemical manipulations conducted on a "laboratory scale"
- Multiple chemical procedures or chemicals are used
- The procedures aren't part of a production process, nor in any way simulate a production process.
- "Protective laboratory practices and equipment" are available and are commonly used to minimize the potential for employee exposures to hazardous substances.

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### Licensed healthcare professional (LHCP)

An individual whose legally permitted scope of practice allows him or her to provide some or all of the healthcare services required for medical evaluations

### Material safety data sheet (MSDS)

Written, printed, or electronic information (on paper, microfiche, or on-screen) that informs manufacturers, distributors, employers or employees about a hazardous substance, its hazards, and protective measures as required by Material Safety Data Sheet and Label Preparation, Chapter 296-839 WAC.

### Permissible exposure limits (PELs)

PELs are employee exposures to toxic substances or harmful physical agents that must not be exceeded. PELs are also specified in WISHA rules found in other chapters.

### Physical hazard

As used in Employer chemical hazard communication, WAC 296-800-170 means a chemical that has scientifically valid evidence to show it's one of the following:

- Combustible liquid
- Compressed gas
- Explosive
- Flammable
- Organic peroxide
- Oxidizer
- Pyrophoric
- Unstable (reactive)
- Water reactive

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### Protective laboratory practices and equipment

Laboratory procedures, practices, and equipment accepted by laboratory health and safety experts as effective, that can be shown to be effective, in minimizing the potential for employee exposure to hazardous substances.

### Reproductive toxin

Chemicals that affect reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)

### Select carcinogen

Any substance meeting one of the following criteria:

- Regulated by WISHA as a carcinogen
- Listed in the “known to be carcinogens” category in the latest edition of the Annual Report on Carcinogens by the National Toxicity Program (NTP).
- Listed in Group I (carcinogenic to humans) in the latest editions of the International Agency for Research on Cancer (IARC) Monographs.
- Listed in either group 2A or 2B by IARC or in the category “reasonably anticipated to be carcinogens” by the NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:
  - After an inhalation exposure of 6 to 7 hours a day, 5 days a week, for a significant portion of a lifetime to dosages of less than 10 mg/m<sup>3</sup>
  - or**
  - After repeated skin application of less than 300 mg/kg of body weight per week
  - or**
  - After oral dosages of less than 50 mg/kg of body weight per day.

### Time-weighted average (TWA<sub>8</sub>)

An exposure limit averaged over an 8-hour period that must not be exceeded during an employee's workday.

